CLAIMS

1. A method of making an abrasive article, including the steps of
(i) forming a three-dimensional nonwoven fibrous web contacted with dry particulate material that includes fusible binder particles;
(ii) exposing the web to conditions that cause the binder particles to form a flowable liquid binder, and then solidifying the liquid binder to form bonds between the fibres of the web and thereby provide a pre-bonded web; and
(iii) applying abrasive particles to the pre-bonded web, and bonding the abrasive particles to the fibres of the pre-bonded web to provide the abrasive article.

2. A method as claimed in claim 1, in which step (i) comprises forming fibres into a three-dimensional nonwoven web, and then contacting the web with the dry particulate material.

3. A method as claimed in claim 1, in which step (i) comprises mixing fibres with the dry particulate material, and then forming the mixture into a three-dimensional nonwoven web.

4. A method as claimed in any one of the preceding claims, in which the fibres of the web comprise synthetic fibres or natural fibres or mixtures thereof.

5. A method as claimed in claim 4, in which the fibres of the web comprise polyamide fibres.

6. A method as claimed in claim 4, in which the fibres of the web comprises coco, sisal and/or hemp fibres.

7. A method as claimed in any one of the preceding claims, in which the fusible binder particles comprise thermosetting or thermoplastic materials.

8. A method as claimed in claim 7, in which the binder particles are selected from the group consisting of: epoxy resins, copolyamides, and copolyesters.

9. A method as claimed in any one of the precedinig claims, in which the binder particles have a particle size of less than 200μm.

10. A method as claimed in any one of the preceding claims, in which the binder particles are applied to the web without applying a compressive force to the web.

11. A method as claimed in any one of the preceding claims, in which the binder particles are deposited across the whole thickness of the web under the action of an electrostatic force.

12. A method as claimed in any one of the preceding claims, in which an electrostatic charge is applied to the binder particles, which are then directed towards the web while the latter is located on an electrically-grounded support surface.

13. A method as claimed in any one of the preceding claims, in which the web is exposed to heat and/or moisture to cause the binder particles to form the flowable liquid binder.

14. A method as claimed in any one of the preceding claims, in which the abrasive particles are bonded to the fibres of the pre-bonded web by at least a make-coat binder resin.

15. A method as claimed in claim 14, in which the make-coat binder resin is applied to the pre-bonded web in liquid form.

16. A method as claimed in claim 14 or claim 15, in which the abrasive particles are applied to the pre-bonded web at the same time as the make-coat binder resin.

17. A method as claimed in claim 15, in which the abrasive particles and the make-coat

binder resin are applied to the pre-bonded web together as a slurry.

18. A method as claimed in claim 17, in which the slurry is sprayed onto the pre-bonded web.

19. A method as claimed in any one of claims 14 to 18, in which the make-coat binder resin is selected from the group consisting of: latex resins, and phenolic resins.

20. A method as claimed in any one of the preceding claims, in which the pre-bonded web has a maximum density of 50 kg/m^3.

21. A method as claimed in claim 20, in which the pre-bonded web has a maximum density of 30 kg/m^3.

22. A method as claimed in any one of the preceding claims, in which the pre-bonded web has a minimum thickness of 5 mm.

23. A method as claimed in any one of the preceding claims, in which the nonwoven fibrous web is formed by a dry-laying process.